

AMENDMENT

Presented below are the amended claims in a clean-unmarked version

*Claim 1 has
not been canceled
9/4/01*

In the claims:

Please cancel claims ~~1~~²-20, and add the following claims:

21. (New) For use in a communications network having a plurality of nodes wherein a node may encode real-time information for propagating over said network, a method of processing said real-time information comprising:

providing said node with a plurality of output buffers;

- C1*
- (a) electronically capturing said real-time information and converting it into electronic data;
 - (b) differentially encoding said electronic data using a previously stored transmit image as a base to produce differential data;
 - (c) storing said differential data in one of said plurality of output buffers;
 - (d) monitoring said network for access to propagate said differential data;

repeating steps (a)-(d) until said node may propagate said differential data over said network;

transmitting data over said network from the one of said plurality of output buffers providing a best differential data to a receiving node on said network, wherein said best differential data represents a

differential data whose use in conjunction with the previously stored transmit reference image produces an image that approximates a current frame better than use of other differential data contained in said plurality of output buffers; and calculating a new transmit reference image based on said best differential data and said previously stored transmit reference image.

- Sub E17
22. (New) An apparatus comprising:
- an encoder for producing encoded real-time information;
 - a transmit reference buffer for storing a current transmit reference;
 - compression circuitry coupled to the encoder and to the transmit reference buffer for producing compressed data based upon the current transmit reference and the encoded real-time information;
 - a plurality of output buffers coupled to the compression circuitry for storing the compressed data; and
 - a network interface coupled to the plurality of output buffers, the network interface for interfacing with a network, for determining a selected output buffer from the plurality of output buffers and for transmitting data over the network from the selected output buffer, the selected output buffer containing compressed data which accommodates one or more characteristics of the network better than compressed data in at least one other buffer of the plurality of output buffers.
23. (New) The apparatus of claim 22, wherein the selected output buffer contains compressed data which accommodates one or more characteristics of the network better than compressed data in all other buffers of the plurality of output buffers.
- C1
cont'd

Sub 27

24. (New) An apparatus for transmitting real-time information over a network, the apparatus comprising:

an encoder for producing encoded real-time information;

a transmit reference buffer for storing a current transmit reference;

compression circuitry coupled to the encoder and to the transmit reference buffer for producing compressed data based upon the current transmit reference and the encoded real-time information; and

a plurality of output buffers coupled to the compression circuitry for buffering the compressed data, each of the plurality of output buffers having contents, the contents of a selected output buffer of the plurality of output buffers to be transmitted onto a data communications channel of a network based upon one or more characteristics of the data communications channel.

C1
contd

Sub 25

25. (New) The apparatus of claim 24 further comprising a network interface coupled to the plurality of output buffers, the network interface for interfacing with the network, the network interface determining the selected output buffer and transmitting data over the network from the selected output buffer.

26. (New) The apparatus of claim 25, wherein the selected output buffer contains compressed data which, when used in conjunction with the current transmit reference, accommodates the one or more characteristics of the data communications channel better than compressed data from at least another buffer of the plurality of output buffers.

27. (New) The apparatus of claim 25, wherein the selected output buffer contains compressed data which, when used in conjunction with the

current transmit reference, accommodates the one or more characteristics of the data communications channel better than compressed data from all other buffers of the plurality of output buffers.

28. (New) The apparatus of claim 24, wherein the compressed data comprises a differential between the encoded real-time information and the current transmit reference.
29. (New) The apparatus of claim 24, wherein the one or more characteristics of the data communications channel include bandwidth availability on the data communications channel.
30. (New) The apparatus of claim 24, wherein the one or more characteristics of the data communications channel include burstiness of traffic on the data communications channel.
31. (New) The apparatus of claim 24, wherein the one or more characteristics of the data communications channel include transmission delay on the data communications channel.
32. (New) The apparatus of claim 24, wherein the encoded real-time information includes video information.
33. (New) The apparatus of claim 24, wherein the encoded real-time information includes audio information.
34. (New) The apparatus of claim 24, wherein each of the output buffers is dynamically created and configured in accordance with characteristics of a communication channel being used to transmit the encoded real-time information over the network.
35. (New) An apparatus comprising:
an encoder for producing encoded real-time information;

a transmit reference buffer for storing a current transmit reference;
compression circuitry coupled to the encoder and to the transmit reference buffer for producing compressed data based upon the current transmit reference and the encoded real-time information;
a plurality of output buffers coupled to the compression circuitry for storing the compressed data; and
a network interface coupled to the plurality of output buffers, the network interface for selecting a selected output buffer of the plurality of output buffers by determining, with reference to one or more predetermined coding strategies, whether compressed data from the selected output buffer is appropriate for transmission to a receiving node.

36. (New) The apparatus of claim 35, wherein the one or more predetermined coding strategies include minimizing artifacts.

37. (New) The apparatus of claim 35, wherein the one or more predetermined coding strategies include allocating available bandwidth to achieve a higher frame rate.

SUB 32 38. (New) The apparatus of claim 35, wherein each of the output buffers is dynamically created and configured in accordance with characteristics of a communication channel being used to transmit the encoded information over the network.

SUB 47 39. (New) An apparatus comprising:
an encoder for producing encoded real-time information;
compression circuitry coupled to the encoder for producing compressed data based upon a previously stored transmit reference and the encoded real-time information;

a plurality of output buffers coupled to the compression circuitry for storing the compressed data; and

a network interface coupled to the plurality of output buffers, the network interface transmitting compressed data from a selected output buffer of the plurality of output buffers, the compressed data from the selected output buffer when used in conjunction with the previously stored transmit reference approximating a next frame expected by a receiving apparatus.

SUB 3

C1
contd

40. (New) The apparatus of claim 39, wherein each of the plurality of output buffers is dynamically created and configured in accordance with characteristics of a communication channel being used to transmit the encoded information over the network.

41. (New) The apparatus of claim 39, wherein the selected output buffer is selected based upon current conditions of the communication channel.

42. (New) A method of transmitting data over a network comprising:

encoding the data by determining the differences between the data and a transmit reference to produce differential data;

storing the differential data in one of a plurality of output buffers dynamically created based upon characteristics of a communication channel being used to transmit the encoded information over the network;

selecting one of the plurality of output buffers as a current transmit buffer based upon current conditions of a communications channel in the network used to transmit the differential data; and

transmitting the differential data from the current transmit buffer over the network.

43. (New) The method of claim 42, additionally comprising compressing the differential data prior to storing the differential data in one of the plurality of output buffers.
44. (New) A method of transmitting real-time data over a network comprising:
encoding the real-time data by determining the differences between the real-time data and a transmit reference to produce differential data;
storing the differential data in one of a plurality of output buffers, each output buffer dynamically created based upon one or more characteristics of a data communications channel of the network;
selecting one of the plurality of output buffers as a current transmit buffer by determining whether the differential data in a particular output buffer accommodates one or more characteristics of the network better than differential data in at least one other output buffer of the plurality of output buffers; and
transmitting differential data from the current transmit buffer over the network.
45. (New) The method of claim 44, additionally comprising compressing the differential data prior to storing the differential data in one of the plurality of output buffers.
- SUB 46. (New) An apparatus comprising:
an encoder for producing encoded real-time information;
compression circuitry coupled to the encoder for producing compressed data based upon a previously stored transmit reference and the encoded real-time information;

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cancel.

a plurality of dynamically created output buffers coupled to the compression circuitry for storing the compressed data, each buffer being configured in accordance with characteristics of a communication channel being used to transmit the encoded information over a network; and

a network interface coupled to the plurality of output buffers, the network interface transmitting compressed data from a selected output buffer of the plurality of output buffers, the compressed data from the selected output buffer when used in conjunction with the previously stored transmit reference approximating a next frame expected by a receiving apparatus.

47. (New) The method of claim 46, wherein said encoder produces encoded real-time information by determining the differences between the real-time data and a transmit reference.
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